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The Effect Of Joint Book Reading And The Language Experience Approach On Vocabulary Acquisition

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THE EFFECT OF JOINT BOOK READING AND THE LANGUAGE EXPERIENCE APPROACH ON VOCABULARY ACQUISITION

STURM

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The Effect of Joint Book Reading and the Language Experience Approach on Vocabulary Acquisition

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Whitney Sturm, B.S.

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The Effect of Joint Book Reading and the Language Experience Approach on Vocabulary Acquisition

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Abstract

Research indicates that reading books is beneficial for development of vocabulary and syntax (Robbins & Ehri, 1994). Joint book reading is defined as the interaction between an adult, child, and a book while reading. The language experience approach (LEA) is a reading method that "promotes reading and writing through the use of personal experiences and oral language" (Taylor, 1992). The purpose of this study was to systematically evaluate the effectiveness of joint book reading and the language experience approach on vocabulary acquisition in preschool and kindergarten children with hearing impairments, as well as, preschool and kindergarten children with normal hearing.

Within group and between group research designs were used to systematically compare the effects of joint book reading strategies and the language experience approach on receptive and expressive vocabulary. The participants were four preschool and four kindergarten children enrolled at St. Joseph's Institute for the Deaf, an auditory-oral school. The independent variables for the study were the specific reading approach (i.e. joint book reading or language experience approach) and the hearing status (i.e. hearing impaired or normal hearing) of the participants. The dependent variables were pre- and posttest measures from receptive and expressive vocabulary tests, which assessed gains in vocabulary knowledge. The participants were exposed to the specific reading approach for two weeks within their classroom; after which receptive and expressive vocabulary measures were completed.

The results of this study revealed that the participants with hearing impairments acquired receptive and expressive vocabulary following each book reading exposure;

however, the participants with hearing impairments acquired more receptive vocabulary after exposure to joint book reading than after the language experience approach. Though joint book reading had a larger impact on receptive vocabulary acquisition, gains in expressive vocabulary were not definitively attributed to either book reading approach. The participants with normal hearing did acquire receptive vocabulary after each book reading approach; however, their gains were not as large as the participants with hearing impairments. Acquisition of novel vocabulary occurred after only three readings using the specific reading approach. The findings of this study suggest that preschool and kindergarten children with hearing impairments and normal hearing can acquire vocabulary from interactive book readings.

CHAPTER I

Introduction

Research indicates that book reading is beneficial for children (Robbins & Ehri, 1994). Reading books provides a natural and familiar opportunity for exposure to oral and written language and aids in the development of emergent literacy skills. The highly-structured environment and familiar routines that surround book reading assist in the development of vocabulary and syntax. Children are also able to learn the function and form of print in a natural context during book reading (Kaderavek & Justice, 2002).

It has been hypothesized that incidental exposure to spoken and written language accounts for a majority of vocabulary acquisition. Incidental exposure to novel vocabulary occurs informally during play, watching television, or book reading (Justice, Meier, & Walpole, 2005). Research has shown that children learn vocabulary introduced during the incidental exposure of book reading (Arnold, D., Lonigan, C., Whitehurst, G., & Epstein., J., 1994; Justice, 2002; Justice et al., 2005; Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, et al., 1988)

Joint book reading is defined as the interaction between an adult and child with a book while reading. The interaction and shared focus of the adult and child on the story and pictures is emphasized (Ezell & Justice, 2005). Facilitation of language development occurs because of the social and contextual support provided by joint book reading. The adult actively encourages verbal participation and learning of new concepts with repetition of familiar book routines. The adult is able to observe the child's level of understanding of the story with questioning throughout the reading (Crain-Thoreson & Dale, 1999).

The language experience approach (LEA), which incorporates the use of personal experiences and oral language is based on the whole language approach (Taylor, 1992), which is based upon the belief that literacy skills will develop similarly to spoken language (Sawyer, 1991). The relationship between experiences and reading and writing is utilized to promote oral and written language. LEA involves the reader dictating ideas about an experience to a teacher, the teacher writing the ideas in story form, and then the reader using the story as reading material (Schirmer, 1994). The dictation of sentences and stories by the student which then serves as the basis for reading are the foundation of this approach (Wurr, 2002). LEA integrates different systems of language, including orthographic, phonological, semantic, and syntactic. The incorporation of reading, writing, listening, and speaking within one approach helps children develop competence with written language.

Children with hearing impairments often have delayed language due to decreased auditory access to spoken language. Children with hearing impairments are likely to have deficits in syntax, morphology, semantics, pragmatics, and phonology since they have limited access to the spoken words and their meaning (Fung, Chow, & McBride-Chang, 2005). Despite these challenges in learning language, research has indicated that children with hearing impairments can acquire vocabulary from book readings (Aram, D., Most, T., Mayafit, H., 2006; Fung et al, 2005)

There is extensive research on joint book reading and its effect on vocabulary acquisition, but fewer published studies on the effects of joint book reading on vocabulary learning. There are even fewer published studies that specifically focus on explicit vocabulary learning from joint book reading for children with hearing

impairments. Additionally, there are only case studies that address the effectiveness of LEA, and these case studies do not systematically demonstrate LEA's effectiveness on vocabulary. The purpose of the current study was to systematically compare the effectiveness of joint book reading and the language experience approach on vocabulary acquisition in preschool and kindergarten children with hearing impairments and normal hearing.

CHAPTER II

Review of the Literature

The review of literature presents information on various aspects of vocabulary acquisition. First, Vygotsky's social theory of learning is summarized, followed by discussion regarding vocabulary learning through experiences. Information relating to language in children with hearing impairments is presented next. Finally, joint book reading and the language experience approach are summarized.

Vygotskian Social Theory of Learning

Vygotsky's social theory emphasizes the necessity of interaction between an adult and a child for the acquisition of knowledge (van Kleeck & Vander Woude, 2003). An important aspect of Vygotsky's theory is that social interactions will eventually become internalized by the child (Peterson & McCabe, 1994). This is the basis for Vygotsky's zone of proximal development. The zone of proximal development represents the child's range of abilities with assistance from an adult. It was believed that the zone represents the child's potential that could be developed through social interactions and experiences (Norris & Hoffman, 1993).

Scaffolding strategies help develop a child's potential within the zone of proximal development. Initially, the adult provides the structure and content of the new skill being developed with the child only answering questions. As the skill is developed, the child gains more responsibility for the content and structure surrounding the use of the skill. The child takes more responsibility for the task or skill as competence is gained. The child has internalized the major aspects of the task or skill when he is able to independently complete the task or use the skill (Peterson & McCabe, 1994). When

interacting in the zone of proximal development, the adult-child interaction facilitates child's thinking, language, and vocabulary (van Kleeck & Vander Woude, 2003).

Vocabulary Learning Through Experiences

Experiencing vocabulary in a naturalistic setting is thought to be essential for early language development. Young children need experiences to provide a context for language acquisition. They typically first comprehend words in the context of an experience and later use the newly understood words in that same context. Predictable activities allow children to learn novel words. Typically, scripts or early social routines develop with repeated exposure to the activity. Scripts serve to expose the child to specific words relevant to the activity (Crais, 1990).

It has been hypothesized that the majority of vocabulary acquisition occurs through incidental exposure (Justice, 2002). Incidental exposure occurs when a new word is informally introduced, such as during book reading with an adult, playing with an older child, or watching television (Justice et al., 2005). A novel word is typically not defined or taught by the individual who used it; instead contextual cues surrounding the use of the word help the child acquire knowledge about the novel word (Justice, 2002). The newly constructed meaning is then attached to the stored phonological representation and incorporated with existing knowledge. By the end of the process, the novel word is encoded, understood, and stored, so the child will be able to retrieve it on a later occasion (Senechal, Thomas, & Monker, 1995).

Word acquisition has also been shown to be a gradual process. Incomplete representations of newly acquired words progressively become a more complete depiction with more exposure (Justice et al., 2005). Fast mapping, in which partial word

knowledge is gathered, is used upon the initial encounter of a novel word. Slow mapping is then used to refine and complete the representation of the word during subsequent encounters (Ard & Beverly, 2004).

Research has shown that young children are able to acquire vocabulary from the incidental exposure that book reading provides. Senechal et al. (1995) and Senechal and Cornell (1993) proposed a process through which children acquire vocabulary during book reading. The process is initiated by an encounter with a novel word, which is similar to word learning from experiences. A phonological representation of the novel word must be preserved. Information regarding the novel word's meaning from the syntax, context, and pictures accompanying the novel word is extracted, and an appropriate meaning is constructed. The input received from adults can also influence word learning.

Language in Children with Hearing Impairments

Children with hearing impairments do not have adequate access to auditory input. While the signal can be amplified with hearing aids or cochlear implants, children with a hearing impairment do not have the same auditory access as children with normal hearing (Goldin-Meadow & Mayberry, 2001). Since oral language development is centered around spoken words and their meaning, it would logically follow that children with hearing impairments often have delayed language due to the decreased access to spoken language. Children with hearing impairments have deficits in syntax, morphology, semantics, pragmatics, and phonology. The language deficits presented by children with hearing impairments typically lead to difficulty in all language-based academics (Fung et al., 2005).

Joint Book Reading

Joint book reading (JBR) is defined as the interaction between an adult and a child while reading a book. It is not simply the adult reading the text and the child listening. Using reading as a context for language development requires the use of additional techniques. There is an emphasis placed on the interaction and shared focus of the adult and child on the story and pictures (Ezell & Justice, 2005).

The social and contextual support found in JBR approach facilitates language and vocabulary development. The adult actively encourages verbal participation and learning of new concepts with repetition and familiar book routines. The adult is able to observe the child's level of understanding of the story with questioning throughout the reading. If it is observed that the child is having difficulty, the adult is encouraged to scaffold comprehension by using the illustrations. The adult helps the child learn more complex language as the child begins to construct the meaning from the story (Crain-Thoreson & Dale, 1999). The adult is able to teach novel vocabulary intensively while reading a book (DeBaryshe, 1993).

The flexibility of JBRaccommodates the child's current language abilities as well as promotes growth. The rich and structured environment facilitates labeling of pictures, descriptions of story events, prediction of story events, and sharing of experiences relating to the story. The contextualized routines used with joint book reading provide the child with communicative opportunities for interactions relating to the child's interests (Kaderavek & Justice, 2002). The child is exposed to complex language models through the reading and interaction during and after reading (DeBaryshe, 1993).

Three principles form the foundation for JBR. The first principle of is to promote active participation during the story. The adult uses specific techniques to encourage active participation instead of passive listening. Using open-ended questions during the JBR encourages the use of spontaneous speech as opposed to yes-no questions which only require a one-word response (Hargrave & Senechal, 2000). The adult is encouraged to use "wh" questions throughout the story. The "wh" questions can focus on labeling objects in the illustrations or can emphasize simple events of the story. The child's answer should be followed by an additional related question. For example, after the child labeled an item, asking for an attribute of the item can further encourage verbal participation.

Providing the child with feedback is the second principle of JBR. This feedback should be instructional in nature. Recasting or expanding the child's utterance is an excellent method of providing feedback (Hargrave & Senechal, 2000). Additionally, casually correcting the child's utterance emphasizes what the child could have said (Whitehurst et al., 1988). Repeating the response validates the child's response. Additionally, the adult is encouraged to not only repeat the response verbatim but also expand upon it. This provides the child with a more complex language model than he or she provided. The child may encounter questions or concepts that are difficult at times during the reading. This provides a teaching moment for the adult. It is suggested that the adult provide the answer and then have the child repeat the answer given.

The final principle of JBR is altering the reading to accommodate the child's language abilities. A progression in reading style should be seen over time, because the child's language is developing (Hargrave & Senechal, 2000). While it is important to

progress with the child's abilities, it is also essential to remember the child's current abilities and not ask questions that are too difficult. For example, if the child has difficulty labeling pictures in the story, the adult should not expect the child to provide attributes and functions of the item (Whitehurst et al., 1988). General and specific praise is a technique that is encouraged during the joint book reading process. This encourages continued verbal participation. The child will also show more interest in participating in repeated readings if the adult follows the child's lead throughout the reading. It is recommended that when the child shows interest in a particular item that the adult encourage the child to talk about it. The adult must also remember that it is unnecessary to discuss or label every illustration throughout the book.

Efficacy of Joint Book Reading for Vocabulary Learning of Normally Developing Children

Adult strategies that encourage active participation during book reading can increase word acquisition (Arnold et al., 1994; Justice, 2002; Justice et al., 2005; Whitehurst, et al., 1988). Interactions between the adult and child that focus on the use of questions, commenting, labeling, elaboration and repeated exposures impact the acquisition of vocabulary. Whitehurst et al. (1988) and Arnold et al. (1994) examined the impact of questions and expansions during JBR on expressive vocabulary in toddlers. The effectiveness of questioning in joint book reading on expressive and receptive vocabulary in preschool children was evaluated by Senechal et al. (1995), Senechal (1997), and Senechal and Cornell (1993). Studies by Ard and Beverly (2004) and Justice (2002) investigated the impact of questioning and commenting during JBR on the receptive and expressive vocabulary of preschool children. Finally, Justice et al. (2005)

and Elley (1989) examined the effects of elaboration during JBR on receptive and expressive vocabulary of elementary aged children. These studies are reviewed in the following paragraphs.

Two studies have found that questions and expansions influence the expressive vocabulary in two to three year old children. Whitehurst et al. (1988) and Arnold et al. (1994) investigated the use of JBR strategies with two to three year old children as a method to increase expressive vocabulary. Both studies evaluated the use of open-ended questions, attribute questions, and expansions as compared to verbatim reading. Whitehurst et al. (1988) and Arnold et al. (1994) pretested and posttested typically developing children, using the verbal expressive subtest of the *Illinois Test of Psycholinguistic Abilities* (ITPA) (Kirk, McCarthy, & Kirk, 1968) and the *Expressive One-Word Picture Vocabulary Test* (EOWPVT) (Gardner, 1981). The children exposed to the JBR strategies demonstrated significant expressive vocabulary gains as compared to the children in the control group after four weeks (Whitehurst et al., 1988; Arnold et al., 1994). Whitehurst et al. (1988) found that children exposed to strategies were eight and half months ahead of the control group on the ITPA and six months ahead of the control group on the EOWPVT after four weeks. The findings of Arnold et al. (1994) were similar to Whitehurst et al. (1988). These findings suggest that the use of questions and expansions during joint book reading influence expressive vocabulary.

The following five studies (Ard & Beverly, 2004; Justice, 2002; Senechal et al., 1995; Senechal, 1997; Senechal & Cornell, 1993;) each pretested and posttested children's expressive and receptive vocabulary. Expressive vocabulary was assessed by asking the children to label pictures from the storybooks. Receptive vocabulary was

evaluated in a format similar to the *Peabody Picture Vocabulary Test* (PPVT), (Dunn & Dunn, 1981; Dunn & Dunn, 1997) in which the child is shown four pictures and asked to point to a target word from the storybook.

Three studies specifically addressed the impact of questioning on expressive and receptive vocabulary acquisition. Senechal et al. (1995) found that after two exposures to a story, children read to verbatim acquired a mean of 4.4 words on the receptive vocabulary test, while the children exposed to questions during reading acquired a mean of 6.2 words. A mean acquisition of 2.2 words on the expressive vocabulary test was seen with children exposed to questions, while children read to verbatim only produced a mean of 0.7 words (Senechal et al., 1995). Similarly, Senechal (1997) found that children exposed to questioning during storybook reading had a receptive mean acquisition of 5.6 words and an expressive mean of 3.3, compared to a receptive mean of 4.6 and an expressive mean of 0.9 with repeated readings. Children exposed to no strategies and a single reading had a receptive mean acquisition of 3.2 words and an expressive mean of 0.1. Senechal and Cornell (1993) found that questions, repetition of target words and recasting did not increase children's receptive or expressive vocabulary after a single reading. The results of Senechal et al. (1995) and Senechal (1997) suggested that the questioning condition yielded higher receptive and expressive vocabulary acquisition, though Senechal and Cornell (1993) found that the strategies were not effective after a single reading.

Ard and Beverly (2004) and Justice (2002) examined the effect of questioning and commenting during storybook reading on receptive and expressive vocabulary. Ard and Beverly (2004) investigated the influence of four conditions: verbatim reading, only

commenting, only questioning, or both commenting and questioning. Justice (2002) only addressed the influence of questioning and labeling during storybook reading. Ard and Beverly (2004) found that after three readings, significantly more gains in expressive vocabulary were made by the children in the conditions that involved commenting, though gains in expressive and receptive vocabulary were made under each condition. Children in the commenting conditions produced four new words compared to the two words produced by the children in the other conditions. While use of commenting influenced expressive vocabulary gains, receptive vocabulary gains were not significantly impacted by one specific type of adult strategy. The children exposed to a strategy, commenting, questioning, or both, receptively knew an average of seven words, while the children only exposed to repeated-readings receptively knew five words. The use of only commenting, only questioning, or commenting and questioning together were found to be equally effective at increasing receptive vocabulary. The findings that commenting and questioning both impact receptive vocabulary were similar to the results of Whitehurst et al. (1988), Arnold et al. (1994), Senechal et al. (1995), and Senechal (1997) that questioning during joint storybook reading influences receptive vocabulary acquisition. Justice (2002) found that children in the adult labeling condition made significantly more gains in receptive vocabulary (learning a mean of two words), than the children in the questioning condition, (who learned a mean of one word). This finding also supported Ard and Beverly (2004). The contradictory findings in expressive vocabulary of the Justice (2002) study may have been due to the specific storybooks used, the novel words chosen, and the variety of labels and questions used. It was thought that if different

books, longer exposure to the novel words, and less variety of labels and questions were used, the results may have been similar to findings of previous research.

Two studies investigated the impact of elaboration on receptive and expressive vocabulary in elementary school children. Justice et al. (2005) and Elley (1989) investigated the effect of elaboration during storybook reading on expressive vocabulary acquisition in elementary school children. Justice et al. (2005) elaborated on the target vocabulary word by using it in a contextual sentence as well as providing a definition. Each participant was exposed to ten books that were read four times over a ten week period. Elley (1989) provided elaboration by giving a synonym or by pointing to an illustration and providing an explanation. Justice et al. (2005) pretested and posttested expressive vocabulary acquisition using a definition task, in which the children's definitions for the target words were judged as "no knowledge," "incomplete knowledge," or "complete knowledge." Elley (1989) assessed vocabulary acquisition using a forty-one question multiple choice test consisting of twenty-three pictorial items, eighteen verbal synonym items, and five control items administered prior to, one week after, and three months after the initial book reading. Both Justice et al. (2005) and Elley (1989) found significantly greater vocabulary acquisition in children that received elaboration. Justice et al. (2005) found that children in the elaboration conditions acquired approximately four words compared to the two words their peers acquired in the non-elaborated condition learned.

The studies discussed demonstrated that the adult book reading strategies of questioning and commenting impacted word acquisition. Whitehurst et al. (1988) and Arnold et al. (1994) found increases in expressive vocabulary with use of the reading

strategies. Though Senechal et al. (1995), Senechal (1997), Senechal and Cornell (1993), and Ard and Beverly (2004) demonstrated receptive and expressive vocabulary increases with exposure to commenting and questioning during book readings, Justice (2002) found questioning or commenting did not increase expressive vocabulary. Finally, Justice et al. (2005) and Elley (1989) found that elaboration increased expressive and receptive vocabulary.

Efficacy of Joint Book Reading for Children with Language Impairments

Children with hearing impairments often present with language delays due to decreased access to the auditory signal of spoken language, thus it was important to review research regarding the effect of JBR with children with language impairments. Van Kleeck, Vander Woude, and Hammett (2006) investigated the effect of questioning during book reading on receptive vocabulary in preschoolers with language delays. Prior to the beginning of treatment, the *Peabody Picture Vocabulary Test-3rd Edition* (PPVT-III) (Dunn & Dunn, 1997) was administered. The participants had a mean standard score of 77.30 on the PPVT-III, which is suggestive of a receptive language delay. The participants were randomly placed in a treatment or control group. The treatment group received fifteen minute book reading sessions at the school twice a week for eight weeks. The control group received no intervention. Throughout the book reading, scripted questions were asked. At the end of the eight week intervention, all the participants were posttested using the PPVT-III (Dunn & Dunn, 1997). The mean standard score of the treatment group increased from 80.07 to 90.93, while the mean standard score of the control group remained stable around 74. The results indicated that the treatment group made greater gains in receptive language than the control group. The findings implied

that joint book reading with questioning was effective at increasing the receptive vocabulary of preschool children with language delays (van Kleeck et al., 2006).

Hargrave and Senechal (2000) examined the effect of joint book reading strategies on receptive and expressive vocabulary in preschool children with limited vocabularies. The participants' receptive and expressive vocabulary were assessed using the *Peabody Picture Vocabulary Test-Revised* (PPVT-R) (Dunn & Dunn, 1981) and the *Expressive One-Word Picture Vocabulary Test-Revised* (EOWPVT-R) (Gardner, 1990) prior to the beginning of the study. The participants' receptive vocabulary was eight months delayed, while expressive vocabulary was thirteen months delayed. Children who attended one daycare center served as the control, where teachers read the books verbatim without the use of any joint book reading strategies. Another daycare center utilized the joint book reading strategies of questioning and expanding. The teachers, regardless of the condition, were instructed to read daily for a minimum of ten minutes over a four week period and to read each book twice. Upon completion of the intervention period, the participants were posttested using the PPVT-R and the EOWPVT-R. Results indicated that the participants exposed to joint book reading strategies had higher expressive vocabulary scores than the participants not exposed to the strategies. This finding supported the results of Whitehurst et al. (1988) and Arnold et al. (1994). While significant gains were found in expressive vocabulary, no significant gains in receptive vocabulary were found for participants in either condition. The results of this study suggested that joint book reading strategies were effective at increasing expressive vocabulary in children with limited vocabularies (Hargrave & Senechal, 2000).

Efficacy of Joint Book Reading for Children with Hearing Impairments

Aram, Most, and Mayafit (2006) conducted a study to determine if there was a correlation between maternal reading strategies and linguistic and alphabetic skills in thirty kindergarten children with a hearing loss. One participant presented with a mild hearing loss (loss below 40 dB HL), thirteen had moderate losses (loss between 40 dB HL and 70 dB HL), four presented with severe losses (loss between 70 dB HL and 90 dB HL), and twelve had profound losses (loss greater than 90 dB HL). Nineteen children used hearing aids, while eleven used cochlear implants as the form of amplification. The children were born to normal hearing parents. The participants' language, which was assessed with the *Reynell Developmental Language Scales* (Reynell, 1985), was an average of twenty-one months delayed.

Each mother was videotaped telling a story using a wordless storybook. The investigators used an interactive reading inventory, the frequency of a four step dialogic reading cycle, and the number of "wh" questions to assess the maternal joint book reading strategies. The interactive reading inventory evaluated eight parent-child interactions that can occur during book reading. The dialogic reading cycle was defined as: adult asks a question, child answers, adult praises the child's efforts, and finally, the adult expands the child's answer. The percentage of "wh" questions compared to other question forms was calculated.

Phonological awareness, receptive vocabulary, and general knowledge were tested after the book reading. Phonological awareness skills were assessed by having the child point to a picture that had the same initial or final sound as the stimulus word. The *Peabody Picture Vocabulary Test* (PPVT) adapted for Hebrew (Solberg & Nevo, 1979)

was used to assess receptive vocabulary. General knowledge was evaluated using the general knowledge subscale of the *Wechsler Preschool and Primary Scale of Intelligence* (WPPSI) adapted for Hebrew (Liblich, 1979).

The alphabetic skills assessed after the book reading were word writing, word recognition, and letter knowledge. Word writing was assessed by having the child independently write four pairs of words that were orally and visually presented. The child's word recognition abilities were assessed by having the child match printed words to an oral and visual stimulus (a picture) and explain their choice. Letter knowledge was assessed by having the child name twelve letters presented visually.

Aram et al. (2006) found that the maternal reading strategies significantly correlated with linguistic skills. A modest to moderate positive correlation between the three measures (interactive reading inventory, dialogic reading cycle, and "wh" questions) and the linguistic skills was found, with the exception of the dialogic reading cycle and phonological awareness correlation. The correlation between the frequency of dialogic reading cycles and phonological awareness skills was positive but was not a significant correlation (Aram et al., 2006). Additionally, regression analyses revealed that the book reading accounted for 18% of the changes in receptive language after controlling for age and hearing loss.

Fung et al. (2005) investigated the impact of the joint book reading strategies of questioning and commenting on receptive language acquisition in kindergarten and early elementary school children with hearing impairments in Hong Kong. Twenty-eight children, ranging in age from five years old to nine years old, with moderate to severe hearing loss (loss between 40 dB HL and 90 dB HL) participated in the study. Seventeen

of the participants attended the Hong Kong School for the Deaf, while the remaining eleven were enrolled in mainstream classrooms at various schools in Hong Kong. No information regarding amplification was reported by the researchers. All of the mothers had normal hearing and spoke Cantonese (Fung et al., 2005).

The participants were randomly assigned to one of three conditions (joint book reading, typical reading, or control). Over an eight week period, children in the dialogic reading condition were exposed to questioning and commenting throughout the reading, while children in the typical reading condition were read the story verbatim. Eight storybooks were used throughout the study. The control group, which did not participate in any reading, was included to determine if acquisition was due to normal development or the reading condition (Fung et al., 2005).

Due to the children's hearing loss, the researchers felt that picture cards were necessary in order to help the children fully benefit from the joint book reading strategies. The picture cards served as choices for answering the questions. For example, a parent would ask a question regarding the story, and the children would point to the picture card that was the answer. The picture cards also served to stimulate the children's storytelling. Children in the typical reading condition were not exposed to the use of picture cards (Fung et al., 2005).

The children were pretested and posttested using the PPVT-III, which had been translated into Cantonese. The children's performance on this test served as the outcome measure for receptive vocabulary acquisition. The mean pretest score for the joint book reading group was 91.11, the mean pretest score for the typical reading group was 70.11, and the mean pretest score for the control group was 67.8; statistical analysis revealed no

significant difference between the groups. The mean posttest score showed a significant difference in performance between subjects in the joint book reading condition (mean: 114.22) and the typical reading condition (66.56), while the difference between the joint book reading condition (mean: 114.22) and the control group (mean: 65.00) was only marginally significant. The results suggested that the joint book reading condition was effective at improving receptive language in children with hearing impairments (Fung et al., 2005).

Whole Language Approach to Literacy Instruction

Whole language often serves as the foundation for the language experience approach. The whole language philosophy is based upon the belief that literacy can be developed similarly to the acquisition of spoken language. The belief is that children will develop literacy skills by observing reading and writing. Whole language incorporates three ideas of language development in order to help children acquire literacy. A language rich environment is vital for the acquisition of language, thus an environment rich in exposure to reading and writing activities is needed for the development of literacy skills. Since a personal connection with the communication attempt is important in language learning, whole language encourages a personal interest in the reading and writing activities. Finally, language is learned through the support of adults modeling communication with other adults and with the child. Whole language requires the teacher to become the supportive model that guides the child through the reading and writing process (Sawyer, 1991).

Children in whole language classrooms participate in activities that encourage the use of language in all forms. The children participate in reading and writing activities

using their current skills in order to communicate their ideas through print. In the attempt to communicate ideas surrounding personal interest, the children learn rules and conventions needed to adequately communicate the ideas. Key activities of whole language classrooms are reading quality children's literature aloud and writing personally relevant stories. Reading aloud and writing gives the children a model, as well as exposure to book conventions and new vocabulary (Sawyer, 1991).

Language Experience Approach

The language experience approach (LEA) is based on the whole language philosophy; it incorporates the use of personal experiences and oral language to promote reading and writing (Taylor, 1992). LEA involves a child dictating ideas about an experience to a teacher, the teacher writing the ideas in story form, and finally, a child using the story as reading material (Schirmer, 1994). LEA utilizes the relationship between experiences and reading and writing. A key component of LEA is the dictation or creation of sentences and stories by the student which then serves as the basis for reading (Wurr, 2002). The dictation allows the individual to incorporate different systems of language including orthographic, phonological, semantic, and syntactic. Proponents of LEA feel the use of reading, writing, listening, and speaking within one approach helps the individual develop competence with written language.

The traditional implementation of LEA has been described by numerous authors (Ewoldt & Hammermeister, 1986; Pakulski & Kaderavek, 2004; Schirmer, 2000; Tompkins, 2004). The first step of LEA is providing the students with an experience or stimulus to create a story around. The stimulus should be chosen based on familiarity and interest to the students. A fieldtrip, class project, animal, object, celebration, or class

visitor can serve as the stimulus event (Schirmer, 2000). The experience is then discussed as a class after the completion of the activity. The class discussion may revolve around the sequence of events. The student or class then creates a story surrounding the stimulus, which is dictated to and written by the teacher. Some students may be capable of creating an entire story independently, while others may need the teacher to provide questions to fully complete the experience story (Taylor, 1992). The student's or class' story is typically written verbatim by the teacher (Pakulski & Kaderavek, 2004). The primary concern is the message, not the form (Ewoldt & Hammermeister, 1986). It is recommended that little to no editing of the student's story occur, since it may be perceived that the student's language is inferior. After the story is written, the teacher and students read the story together, while the teacher points to the words. The teacher is encouraged to use natural phrasing and intonation to demonstrate appropriate reading aloud (Tompkins, 2004). If a group story is created, the students typically copy the story from the teacher's original and then illustrate their copy. The teacher usually reads the story aloud multiple times as the students follow along using their book (Schirmer, 2000).

LEA is thought to be advantageous for promoting reading. LEA draws on the link between the child's life and reading. The meaning of the text is believed to be easier to construct for the individual since the text is based on personal experiences. Since experiences of the child's life are at the center of the story, the story evokes a greater interest in the story and encourages repeated readings (Pakulski & Kaderavek, 2004). The children's motivation to read is increased because they are reading their own words (Johnson & Roberson, 1988).

LEA is designed for the student to see their ideas and thoughts in written form, which validates the children's thoughts and experiences, as well as gives them a sense of pride. Since LEA uses the children's own words, the children have some previous knowledge when attempting to read, which decreases the children's anxiety and increases their confidence during the reading process (Johnson & Roberson, 1988). In addition, the children's dictations are written in front of them, which allows them to witness their oral expression in printed form, thus strengthening the bond between spoken and written language. The concept that print conveys meaning is immediately created (Pakulski & Kaderavek, 2004).

Efficacy of Language Experience Approach

Eddowes (1990) compared LEA and a basal reading approach to determine which approach was more motivating and achieved the best results. One group of kindergarten students was instructed using a phonics-based basal program, while the second group of kindergarten students was taught using LEA. The *Stanford Early School Achievement Test* was administered to all the kindergarteners. There was no significiant statistical difference found between the two groups on the reading subtest of the *Stanford Early School Achievement Test*, which consisted of sounds and letters, word reading, silent reading, and reading. Though both approaches yielded similar reading scores, the teachers involved in the study indicated that the students' attitudes and interests were different between the approaches. While using the phonics-based basal program, the teachers reported that the children generally did not want to participate and were uninterested in the reading activities. The teachers found the students taught using LEA were interested in reading and writing activities, as well as helping and sharing ideas

during such activities. The students taught with LEA seemed to be more social and interactive during reading and writing activities (Eddowes, 1990).

Efficacy for Language Experience Approach with Children with Hearing Impairments

The 1997 National Survey of Reading Instruction for Deaf or Hard of Hearing Students in the United States revealed that 81% of the 267 programs used LEA, which was an increase of six percent from the 1987 survey. Ninety-one percent of the programs that used LEA stated that the use of LEA was incorporated within a whole language approach. Numerous survey participants stated that LEA was an instructional method used within a whole language approach for five to eight years old children with hearing impairments (LaSasso & Mobley, 1997).

While the National Survey of Reading Instruction for Deaf or Hard of Hearing Students in the United Stated revealed that LEA was prevalent in classrooms for students with hearing impairments, there were few published studies regarding this approach. Johnson and Roberson (1988) documented that the vocabulary of kindergarten and first grade students increased with exposure to LEA, which increased their speaking and signing. Pakulski and Kaderavek (2004) documented the use of LEA with two children with hearing impairments. Though this study did not control for extraneous variables, the researchers noted increases in expressive and receptive vocabulary. While these studies discussed LEA, there are no published studies that systematically compare this approach to another or systematically measure its influence on expressive and receptive vocabulary.

Johnson and Roberson (1988) investigated the use of LEA with seven kindergarten and first grade students with hearing impairments over a three month period.

The class wrote group stories relating to different events that had occurred in the classroom, such as carving pumpkins or a visit with a turtle. Each student provided a sentence to the story. The teacher then read the story to the children. The children then reread the story individually and identified words that they knew. Each child received a copy of the story to read at home. The known words were then added to a word bank and used during word bank activities, such as grouping words with the same initial letter, classifying words, or creating sentences. At the end of the three month period, the kindergarten students had an average of 31 words in their word banks (known words), while the first grade students had an average of 58 words in their word banks. The teacher noted that the students' sentences began to include adjectives over the course of the study. The students' willingness to speak and sign also increased as the teacher saw an increase in their vocabulary (Johnson & Roberson, 1988).

Pakulski and Kaderavek (2004) described the use of LEA with one family who had two children, ages nine and twelve, with hearing impairments. Both children had a severe to profound sensorineural hearing loss and used cochlear implants. The children were educated with a home-school curriculum that emphasized auditory-verbal goals. Both children had numerous experiences with storybooks at an early age, but their parents reported that the children had difficulty following a story and did not like to participate in book reading. The use of LEA was suggested to the parents as an approach to transition to higher level literate language. LEA was used to create experience books relating to fieldtrips, parties and other everyday events. Initially, the children's parents wrote the stories, but as the children's language expanded, they were eventually able to write the stories themselves. The stories emphasized vocabulary or language concepts

that the children needed to learn. For example, the children grew beans and wrote a story in order to practice the words "stalks" and "leaves" (Pakulski & Kaderavek, 2004). The latest language assessment on the children indicated that both were within normal limits for receptive and expressive language. The authors acknowledged that the true amount LEA contributed to the children's language growth was unknown, but the parents felt that LEA was critical in their children's language and literacy development.

Summary

Studies have hypothesized that the majority of children's oral language is acquired incidentally. This incidental exposure provides a natural context in which vocabulary can be acquired. A common setting for incidental exposure is during book reading. Several studies have found that joint book reading strategies positively impact vocabulary acquisition in typically developing children and children with language delays, while few studies have investigated the use of these strategies with children with hearing impairments. A national survey determined that LEA is used in a majority of programs for children with hearing impairments; however, few studies have documented its effect on vocabulary acquisition. Therefore, the purpose of this study was to systematically evaluate the effectiveness of JBR and LEA on vocabulary acquisition in preschoolers and kindergarteners with hearing impairments. Additionally, this study sought to compare the vocabulary acquired by children with hearing impairments to the language acquired by children with typical hearing. The primary research questions were the following:

1. To what extent does the book reading approach (joint book reading or language experience approach) increase receptive and expressive vocabulary in preschoolers and kindergartners with hearing impairments?
2. Is there a difference in the receptive and expressive vocabulary acquired by children with typical hearing versus children with a hearing loss during the use of the book reading approaches?

CHAPTER III

Methods

Overview

A within and between group research design was used to compare the effects of joint book reading (JBR) strategies and the language experience approach (LEA) on receptive and expressive vocabulary. The independent variables for the study were the specific reading approach, JBR or LEA, and the hearing status of the participants(normal hearing or hearing impaired). The dependent variables were pre- and post-test measures from receptive and expressive vocabulary tests.

Recruitment

The director of St. Joseph's Institute for the Deaf was contacted regarding participation and the feasibility of conducting the study at this location. The director, preschool teacher and kindergarten teacher agreed to participate in this study. The letter of support can be found in Appendix C. All parents of children in the preschool and kindergarten classrooms received a letter that reviewed the study and invited their child to participate. Parents provided consent for their child to participate in this study. The parent letter is included in Appendix D. The informed consent forms can be found in Appendix E.

Participants

Eight children, ages 54 months (4:6 years) to 87 months (7:3 years), from St. Joseph's Institute for the Deaf in Urbana, IL served as participants in this study. A summary of group demographics is presented in Table 1. The preschool group was composed of two females and two males, with an average age of 59 months (4:11 years),

while the kindergarten group consisted of two females and two males, with an average age of 72 months (6:0 years).

Table 1. Group demographics

Group Characteristics	Preschool Group	Kindergarten Group
Number of participants	4	4
Number of females	2	2
Number of males	2	2
Average age	59 months (4:11 years)	72 months (6:0 years)
Number of participants with normal hearing	1	1
Number of participants with a severe-to-profound hearing loss	0	1
Number of participants with a profound hearing loss	3	2

Table 2 summarizes individual participants' age, hearing status, amplification type, age of onset, and language scores. The range for age of onset of hearing loss was birth to 18 months for the preschool group and birth to two years for the kindergarten group. One child in the preschool group used a hearing aid in the right ear, and all the children with hearing impairments used at least one cochlear implant. Four of the children had bilateral cochlear implants, while two of the children had unilateral cochlear implants. The preschool class was composed of 1 child with normal hearing, and three children with bilateral profound hearing loss. The kindergarten class consisted of one child with normal hearing, one child with a bilateral severe-to-profound hearing loss and two children with a bilateral profound hearing loss. Each participant with a hearing impairment received an average of 60 minutes of speech-language services per day. All language ages and language scores were provided by the classroom teachers, based upon information from the participant's academic file. The average language age of the

preschool group was 38 months (3:2 years), while the average language age of the kindergarten group was 46 months (3:10). Receptive and expressive age equivalencies were determined by the school speech-language pathologist's assessment of language skills using the *Preschool Language Scale-3*, *Peabody Picture Vocabulary Test-3*, and *Expressive Vocabulary Test*. The average receptive language age equivalent for the preschool class was 42 months (3:6 years), while the average expressive language age equivalent was 43 months (3:7 years). The kindergarten group's average receptive language age equivalent was 57 months (4:9 years), while the group's average expressive language age equivalent was 53 months (4:5 years). The primary mode of communication for all the participants was oral. Cognitive ability of all the participants was judged to be normal by their classroom teachers. One child in the preschool group had a secondary diagnosis of apraxia of speech, while one child in the kindergarten group has a secondary diagnosis of auditory neuropathy.

Additionally, the participants' parents each completed a literacy questionnaire in order to establish the amount of literacy exposure each participant had prior to the study. The questionnaire was adapted from the *Home Literacy Environment Checklist* provided by the National Center for Learning Disabilities. The questionnaire is in Appendix F. A list of thirty-seven statements was provided. The parent was instructed to determine if the statement was true or false for the participant and his/her home environment. A total score of thirty or higher indicated a high literacy exposure in the home environment. The total scores for each participant were calculated and revealed that all participants had high literacy exposure in the home. The range of scores was 30-37.

The preschool teacher had four years of experience teaching children with hearing impairments and three years of experience teaching at St. Joseph's School for the Deaf. The kindergarten teacher had been teaching children with hearing impairments for six years, one year at St. Joseph's School for the Deaf. Both the preschool and kindergarten teachers utilized picture books centered around a specific theme throughout their curriculum. Each teacher frequently utilized commenting and questioning during book reading prior to the study.

Table 2. Individual Participant Characteristics

	Chronological Age (months)	Hearing Status	Amplification Type	Age of Onset (in months)	Language Age (in months)	Receptive Language Age	Expressive Language Age
Preschooler 1	54	Hearing impaired	Bilateral Cochlear Implants	3	38	44	53
Preschooler 2	69	Hearing impaired	Bilateral Cochlear Implants	18	33	42	39
Preschooler 3	60	Hearing impaired	Left Cochlear Implant; Right Hearing Aid	Birth	28	28	28
Preschooler 4	54	Normal hearing	None	n/a	54	54	54
Kindergartener 1	67	Hearing impaired	Bilateral Cochlear Implants	24	40	46	36
Kindergartener 2	70	Hearing impaired	Bilateral Cochlear Implants	Birth	48	54	56
Kindergartener 3	87	Hearing impaired	Right Cochlear Implant	Birth	32	63	54
Kindergartener 4	66	Normal hearing	None	n/a	66	66	66

Independent Variable

The active independent variable for the current study was the specific book reading approach used. The participants were exposed to joint book reading strategies for two consecutive weeks and the language experience approach for two consecutive weeks. Due to the school calendar, a two week break occurred between the exposure of the two approaches. The preschool group participated in the LEA first and then the joint book reading approach, while the kindergarten group was exposed to the joint book reading approach initially and then the LEA in order to counterbalance the order effect. Each group was exposed to two themes for the specified reading approach. The four themes used were planting flowers, baking a cake, making tacos, and creating a bird feeder. Each group participated in the same themes simultaneously, regardless of the approach. For example, the first theme was planting flowers for both groups; the preschool group participated in LEA while the kindergarten group participated in JBR.

Prior to the beginning of the use of the specific book reading approach, the children participated in an activity centered around the book's theme. For example, the theme of one book was planting flowers, so the participants planted flowers before the specific book reading began. An activity was completed prior to each new book. The activities were lead by the primary investigator and the classroom teacher. Throughout the activity, the primary investigator and the classroom teacher verbally labeled items and actions that were targeted, as well as untargeted words. Four words were specifically targeted for each activity. For example, when planting flowers, the primary investigator said, "The soil is where we plant the flowers," and the classroom teacher pointed to the soil and stated, "This is the soil." No responses or statements from the participants were

elicited during the activity. Throughout the activity, digital pictures were taken to be used with the LEA. The participants were engaged in the specific activity for 20 minutes. A list of the specific activities and targeted words can be found in Appendix G.

The language experience approach was conducted in the traditional manner described by numerous authors (Ewoldt & Hammermeister, 1986, Pakulski & Kaderavek, 2004, Schirmer, 2000; Tompkins, 2004). After the activity was completed, the participants in the LEA portion of the study were shown the digital pictures. The digital pictures served to elicit a narrative describing the activity. The primary investigator and the classroom teacher wrote the participants' verbal response verbatim under the digital picture in order to create a classroom story depicting the activity completed. If the participants' verbal responses did not include the target words, the primary investigator and classroom teacher prompted the use of the words with questions. For example, if the participant stated "We put flowers in the dirt," but the target word was "soil," the prompt was "What word did we use to say dirt?" Each participant was required to provide three statements for the narrative. Due to the participants' delayed expressive language skills, verbal cues such as "We did what?" or "You did what?" were used to elicit the narrative statements. It was noted that the preschool group required more verbal cues than the kindergarten class. The completed narrative with digital pictures was then used as the book to target the specific words. The teacher read the experience book, asked one question and made one comment for each of the targeted words in the book during the reading. The questions and comments were planned prior beginning to read. The specific questions and comments were placed on the specific page they were to occur. The experience book was read three times throughout the week. The day and time of the

presentation remained constant throughout the study. No sign language was used during the reading of the books since the participants were enrolled in an auditory-oral program.

Participants in the JBR portion of the study received additional exposure to the target words through the reading of nonfiction books. They did not participate in any discussion related to the activity immediately after the activity was completed or write a story about their experience. The procedures used during the joint book reading condition included the classroom teacher discussing their knowledge of the theme in order to activate schema knowledge.

Nonfiction books were used for the joint book reading portion of the study. Nonfiction picture books were chosen based on research that demonstrated that children can learn from informational texts. Duke, Bennett-Armistead, and Roberts (2003) cited several studies that supported the premise that children in kindergarten and first grade can learn from informational texts. These studies demonstrated that the children were able to comprehend the information presented through informational texts. The children's capabilities to learn from informational texts were further demonstrated by the children's discussions that occurred after the informational reading. Additionally, Duke et al. (2003) cited several studies demonstrating that children enjoy informational texts. When given a choice between a narrative text and an informational text, the children preferred the informational text at least fifty percent of the time

The nonfiction books chosen for the study were part of the *Welcome Book Series*, published by Children's Press, a division of Scholastic, Inc. The books were written by one of three authors. The three authors were Edana Eckart, Mary Hill, or Jack Otten. Each book had 21 pages. The average words per page was 13.725. The illustrations in

the books were photographs. *Welcome Book Series* provides an early intervention level for each book. A table listing the books, authors, number of pages, and early intervention level can be found in Appendix H. The following four books that corresponded to the four themes used during this study were the following: *Watch Me Plant a Garden, Let's Make a Cake, Let's Make Tacos,* and *Watch Me Make a Bird Feeder.*

The classroom teacher read the nonfiction book using two joint book reading strategies. The joint book reading strategies used during this study were questioning and commenting, which have been shown to be effective at increasing receptive and expressive language (Whitehurst et al., 1988; Arnold et al., 1994; Ard & Beverly, 2004). The teacher asked one question relating to each target word in the book during the reading. For example, the teacher asked "What is the flower being planted in?" in order to elicit the target word "soil." Additionally, the teacher made one comment on each target word in the book during the reading. For example, the teacher pointed to soil and said, "This is the soil." The questions and comments were planned prior to beginning to read. The specific questions and comments were placed on the specific page in which they were to occur. All books were read aloud to the class three times per week. The day and time of the presentation remained constant throughout the study. No sign language was used during the reading of the books since the participants were enrolled in an auditory-oral program.

Treatment Validity

Treatment validity was monitored by the primary investigator. All of the book readings were audio recorded, and 50% of the book readings for each teacher were randomly selected and reviewed for fidelity to the protocol. A checklist that included the

specific questions and comments for the book read was completed while reviewing the audio recording. The checklist was used to record the book read, the questions asked, the comments made, and ensure that no additional questions or comments were made. Any additional comments made or questions asked were recorded. Review of the book readings revealed that the teachers read the books according to the protocol. No additional questions or comments were made by the teachers during the book readings. Additionally, review revealed that each book was read three times, which followed the protocol.

Dependent Variables

Summer Assessment to Select Target Words. The dependent variables of this study were the pre- and post-test measures of receptive and expressive vocabulary. The receptive and expressive language measures were designed similarly to those used by Ard and Beverly (2004), Whitehurst et al. (1988), Arnold et al. (1994), Justice et al. (2005) with picture pointing from a set of four being used to evaluate receptive skills and labeling , in addition to providing attributes to evaluate expressive skills.

The participants' expressive and receptive knowledge of forty words was assessed in the summer of 2007. Forty nouns were chosen from the ten nonfiction books described previously. The six sets (each set composed of four words) that the participants demonstrated the lowest knowledge of were selected to be used in the study. During the fall of 2007, one set of four words was targeted with each theme, resulting in a total of eight words targeted per reading approach. Eight words were targeted in each approach, while eight of the words from books not used in the study served as control words. Testing of the non-targeted words was used in an attempt to control for

extraneous variables, such as the practice affect, familiarity with examiner, incidental learning, and maturation.

Receptive vocabulary was assessed in a similar format as standardized forced-choice format tests, such as the *Peabody Picture Vocabulary Test-IV*. The illustrations used for the target and foils were colored line drawings. Each plate had one target and three foils. The foils used were items within the same category as the target item. Initially, forty plates and two example plates were used during the summer assessment (pretest) in order to determine the participants' knowledge of the potential target words. A complete list of targets and foils can be found in Appendix I. After the summer assessment (pretest) was completed, the six low performing sets were selected. Each set was composed of four target words. The remaining assessments consisted of a total of 26 plates, 16 plates for the targeted words, 8 plates for control words and 2 example plates. The directions, "Point to," were verbally given with no use of sign language. Self-corrections were allowed.

Expressive vocabulary was assessed in a similar format to the method described by Richard and Hanner (2005). Each participant was shown a colored line drawing that illustrated the target word and verbally asked, "What is this?" and then was asked, "What can you tell me about this?" The participants were required to give a verbal response. If a participant signed the response instead of verbalizing it, the prompt, "Tell me with your voice what this is," was given. Each participant's responses were recorded verbatim on the record sheet.

Assessment Schedules. Assessment of the selected words was conducted immediately after the units were targeted and after a four week delay to measure short-

term learning and long-term retention. The pretest assessment of the forty potential words was completed in the summer of 2007. Receptive and expressive knowledge of the first eight target words from the first and second themes, as well as the eight control words, was assessed after the participants experienced the reading approaches for two weeks. Assessment was completed on the second set of eight target words from the third and fourth themes and the eight control words after the participants had completed the second reading approach for two weeks. At this same time, the first eight target words and eight control words from the first and second themes were measured again in order to evaluate the participants' knowledge after a four week delay. The second set of eight target words and eight control words from the third and fourth themes was evaluated four weeks after the completion of the specified reading approach in order to measure knowledge after a four week delay. The schedule for assessment is presented in Table 3.

Table 3. Schedule of Assessment

First Assessment (summer-pretest)	**Second Assessment**	**Third Assessment**	**Fourth Assessment**
Assess all 40 potential words prior to instruction	Assess 8 words from the first and second themes and 8 control words	Assess all 16 target words and 8 control words	Assess 8 words from third and fourth themes and 8 control words

Scoring of the Dependent Variables. Receptive knowledge was assessed by using a forced-choice picture pointing task. The participants earned one point for each correct response (8 points for control words, 8 points for the LEA target words, and 8 points for the JBR target words). The individual scores for the responses were summed in order to achieve a total score for control words, total score for LEA target words and total score

for JBR target words. These total scores were then converted to percent accuracies by dividing each of the total scores by eight.

Expressive knowledge was assessed initially by requesting the participant to provide a label (referred to as labeling); each correct response was awarded one point, for a possible total of 8 points for the control words, 8 points for the LEA target words, and 8 points for the JBR target words. These totals were then converted to percent accuracies by dividing each total by eight. For example, the participant was shown a colored-line drawing of soil. After being asked, "What is this?," the participant stated "soil." This response would receive one point since it was the correct label.

Expressive knowledge was further assessed by requesting the participant to provide attributes (referred to as attributes). After being asked to label the picture, the participant was asked to tell anything they could about the item. Each utterance was placed into one of the following groups: function, association, category, color, size/shape, and location/origin. This information was grouped into one of six categories, thus the participant could earn an additional six points per word, for a possible total 48 points for control words, 48 points for the LEA target words, 48 points for the JBR target words. If the utterance was correct for the target words the participant described, the utterance received a score of one for that group. For each target word, the participant could receive a total of six points. For example, the participant was shown a colored-line drawing of soil. Upon being asked, "What can you tell me about this?," the participant stated, "Plant seeds, brown, and flower grows in it." The participant would receive one point for function (plant seeds), one point for color (brown), and one point for association (flower). This participant received a total of three points out of six points for the target word "soil."

The individual scores for the responses were summed in order to achieve a total score for control words (possible 48 points), total score for LEA target words (possible 48 points) and total score for JBR target words (possible 48 points). These total scores were then converted to percent accuracies by dividing each of the total scores by 48.

Reliability

The assessments of 25% of participant responses were scored by the primary investigator and an additional person in order to determine interjudge reliability. An agreement index was calculated to determine the reliability between the scorers. A classroom aide who worked at St. Joseph's Institute for the Deaf and the primary investigator scored the receptive measure for 25% of the participants simultaneously. Interjudge reliability for the receptive measure was 100%, indicating excellent reliability. All the expressive measures for each participant were audio recorded. The expressive measures of 25% of the participants were randomly selected, and a graduate student in speech-language pathology also scored the responses. The interjudge reliability for the expressive measure was 100%, indicating excellent reliability.

CHAPTER IV

Results

A within and between group research design was used to compare the effects of joint book reading (JBR) and the language experience approach (LEA) on receptive and expressive vocabulary in preschool and kindergarten age children with and without a hearing loss. Data was collected over an eight week period at St. Joseph's Institute for the Deaf.

The percent accuracy for the LEA target words, JBR target words and the control words was calculated for the pretest, immediate posttest, and the maintenance posttest. The mean gain of immediate knowledge was calculated by subtracting the pretest percent accuracy from the immediate posttest percent accuracy. The mean gain of maintained knowledge was figured by subtracting the pretest percent accuracy from the maintenance posttest.

Receptive Vocabulary Acquisition

Individual percent accuracies for the receptive measure are included in Appendix J. Table 4 summarizes the mean percent accuracies and standard deviations on the pretest, immediate posttest, and maintenance posttest, as well as the immediate gains and maintenance gains. The hearing impaired group, consisting of six participants, demonstrated a gain of 16.67% in receptive knowledge immediately following exposure to LEA. The gained percentage of receptive knowledge increased to 22.92% at the maintenance posttest. A mean gain of 39.58% in receptive knowledge was revealed immediately following exposure to JBR. JBR had largest gains, but these target words were also the words that began with a lower pretest percent accuracy. Maintenance of

35.42% of the gained knowledge was seen four weeks following exposure to JBR. The hearing impaired group demonstrated a mean gain of 0% receptive knowledge for the control words; however, an increase of 23.96% in control receptive knowledge was seen at the maintenance posttest. The difference between the immediate gains between LEA, JBR, and the control words indicated that both book reading approaches were instrumental in the acquisition of receptive vocabulary. Additionally, the difference in immediate gains between LEA and JBR suggested that JBR was more influential in receptive vocabulary acquisition for these participants with hearing impairments.

The normal hearing group, composed of two participants, had similar accuracies for LEA, JBR, and control words at the pretest. The normal hearing group demonstrated a gain of 25% in receptive knowledge immediately following LEA exposure, as well as after JBR exposure, which placed mastery of the target words at 94% and 100% accuracy. Accuracy decreased on the immediate posttest for the control words. Since the percent accuracy for the receptive knowledge of the control words decreased and the receptive knowledge of the target words increased, it was thought that both book reading approaches were equally effective in the acquisition of receptive vocabulary for the participants with normal hearing. The normal hearing group maintained the receptive knowledge gained four weeks after LEA and JBR exposure; accuracy remained high, at nearly 94%. Control word accuracy remained lowered (near 60%) at the maintenance posttest.

Table 4. Receptive Vocabulary Mean Accuracies and Standard Deviations

	Pretest	Immediate Posttest	Maintenance Posttest	Mean Gain Pretest - Immediate Posttest	Mean Gain Pretest - Maintenance Posttest
			Hearing Impaired (n=6)		
LEA target words	47.92% (18.40)	64.58% (18.40)	70.83% (30.28)	16.67% (28.14)	22.92% (34.84
JBR target words	29.17% (17.08)	68.75% (23.39)	64.58% (25.52)	39.58% (20.03)	35.42% (22.94
Control words	41.67% (33.23)	41.67% (13.52)	55.21% (16.50)	0% (30.87)	23.96% (7.31)
			Normal Hearing (n=2)		
LEA target words	68.75% (8.84)	93.75% (8.84)	93.75% (8.84)	25% (17.68)	25% (17.68)
JBR target words	75% (35.36)	100% (0)	93.75% (8.84)	25% (35.36)	18.75% (44.19)
Control words	75% (0)	50% (0)	59.38% (4.42)	-25% (0)	-15.63% (4.42)

Labeling Acquisition

Individual participants' expressive labeling assessment percent accuracies are presented in Appendix K. Table 5 presents the pretest, immediate posttest, and maintenance posttest mean percent accuracies and standard deviations, as well as immediate and maintenance gains for the hearing impaired group and the normal hearing group. Pretest accuracies ranged from 20% to 29% for the hearing impaired group. The hearing impaired group demonstrated a mean gain of 25% in labeling knowledge immediately following exposure to LEA and a mean gain of 39.58% after JBR exposure. A mean gain of 21.88% in labeling of control words was observed. This increase in control word labeling knowledge was similar to the gains seen after LEA and JBR exposure, thus it was difficult to definitively determine that the book reading approaches influenced the acquisition of labels. The hearing impaired group maintained a mean of 18.75% of the gained knowledge in labels four weeks after exposure to LEA and a mean of 35.42% four weeks following JBR exposure. An increase to 32.39% accuracy in

control word knowledge was observed at the maintenance posttest. This finding suggested that extraneous variables, such as school environment, may have influenced the acquisition and retention of labels.

The normal hearing group began with percent accuracies from 62% to 75% on the pretest. They demonstrated a mean gain of 6.25% in labeling knowledge immediately following exposure to LEA. A gain of 12.5% in labeling knowledge was observed immediately after JBR exposure. The normal hearing group gained 15.63% in labeling of control words. Since the normal hearing group demonstrated a larger gain in labeling the control words, extraneous variables likely influenced the acquisition of labels. A similar pattern of gains in control words at the maintenance posttest also suggested that extraneous variables effected the acquisition and retention of labeling.

Table 5. Labeling Vocabulary Mean Accuracies and Standard Deviations

	Pretest	Immediate Posttest	Maintenance Posttest	Mean Gain Pretest - Immediate Posttest	Mean Gain Pretest - Maintenance Posttest
			Hearing Impaired (n=6)		
LEA target words	29.17% (20.41)	54.17% (30.28)	47.92% (22.94)	25% (15.81)	18.75% (10.46)
JBR target words	25% (17.68)	64.58% (20.03)	60.42% (20.03)	39.58% (22.94)	35.42% (16.62)
Control words	20.83% (23.27)	42.71% (25.13)	53.13% (27.31)	21.88% (19.26)	32.29% (13.93)
			Normal Hearing (n=2)		
LEA target words	68.75% (26.52)	75% (17.68)	87.5% (0)	6.25% (8.84)	18.75% (26.52)
JBR target words	75% (0)	87.5% (17.68)	93.75% (8.84)	12.5% (17.68)	18.75% (8.84)
Control words	62.5% (0)	78.13% (13.26)	93.75% (0)	15.63% (13.26)	31.25% (4.42)

Attribute Acquisition

Individual percent accuracies for the attribute assessments are presented in Appendix L. Table 6 summarizes the mean percent accuracies and standard deviations

for the pretest, immediate posttest, and maintenance posttest, as well as the immediate and maintenance gains. Percent accuracy was low on the pretest for use of attributes in the hearing impaired and normal hearing groups. The JBR target words were slightly lower than the LEA target words and control words. The hearing impaired group demonstrated a mean gain of .70% in attribute knowledge immediately following exposure to LEA. A mean gain of 2.08% was seen immediately following JBR exposure. The hearing impaired group had a mean gain of .52% in attribute knowledge of the control words at the immediate posttest. There were similarities seen in the gains following LEA exposure and the control words; therefore it was difficult to definitively report that the book reading approaches influenced attribute acquisition. The hearing impaired group maintained the .70% of attribute knowledge four weeks after LEA exposure. Maintenance of 1.74% of attribute was observed four weeks following JBR exposure. The hearing impaired group maintained .34% of attribute knowledge for the control words. It was difficult to determine if the maintenance of knowledge was due to the book reading approaches or extraneous variables, due to the similarities between the maintenance of LEA target words and the control words and due to the small gains in attributes overall.

Table 6. Attribute Mean Accuracies and Standard Deviations

	Pretest	Immediate Posttest	Maintenance Posttest	Mean Gain Pretest - Immediate Posttest	Mean Gain Pretest - Maintenance Posttest
			Hearing Impaired (n=6)		
LEA target words	1.74% (2.77)	2.43% (4.04)	2.43% (4.25)	.70% (2.15)	.70% (3.14)
JBR target words	.69% (1.70)	2.78% (2.52)	2.43% (3.82)	2.08% (2.64)	1.74% (2.77)
Control words	2.08% (3.48)	2.60% (4.46)	2.43% (4.5)	.52% (1.83)	.34% (1.70)
			Normal Hearing (n=2)		
LEA target words	4.17% (5.89)	5.21% (7.37)	12.5% (2.94)	1.05% (1.48)	8.34% (2.95)
JBR target words	4.17% (5.89)	5.21% (7.37)	11.46% (1.47)	1.05% (13.26)	7.30% (4.42)
Control words	3.13% (4.42)	4.69% (3.68)	8.34% (4.42)	1.56% (.74)	5.21% (0)

The normal hearing group had slightly higher percent accuracy than the hearing impairment group on the pretest. The normal hearing group revealed a mean gain of 1.05% in attribute knowledge immediately after LEA exposure, as well as immediately following JBR. A mean gain of 1.56% in attribute knowledge of the control words was observed. A higher mean gain in attribute knowledge of the control words suggested that extraneous variables, not the book reading approaches, influenced the acquisition of attributes in these normal hearing participants. Additionally, the maintenance gain increased to 8.34% four weeks following exposure to LEA, and a gain of 7.30% in attribute knowledge was seen at the maintenance posttest four weeks following JBR exposure. A mean gain of 5.21% in attribute knowledge of the control words at the maintenance posttest also indicated that attribute acquisition and retention was impacted by extraneous variables.

CHAPTER V

Discussion

The current study investigated the effectiveness of joint book reading (JBR) and the language experience approach (LEA) on receptive and expressive vocabulary acquisition in children with hearing impairments. Additionally, this study sought to compare the vocabulary acquisition of children with normal hearing and hearing impairments.

LEA versus JBR in Children with Hearing Impairments

The first research question addressed the effectiveness of LEA and JBR on vocabulary acquisition in preschool and kindergarten children with hearing impairments. According to Vygotsky's social theory of learning, the social interactions between adults and children facilitate thinking, learning, and vocabulary (van Kleek & Vander Woude, 2003). Social interaction is an element of both JBR and LEA; however, the social interaction in LEA is focused around a personal experience. Since a greater personal aspect is present in the social interaction with LEA, it was predicted that LEA would be more instrumental in the acquisition of vocabulary for children with hearing impairments.

Analysis of the receptive vocabulary data revealed that the participants with hearing impairments demonstrated more gains immediately following each approach than the control words. This finding suggested that the participants acquired the receptive vocabulary from the book reading approaches. Book reading, either JBR or LEA, aided in the acquisition of receptive vocabulary for participants with hearing impairments. Additionally, it was found that JBR was slightly more instrumental in receptive vocabulary acquisition, since the participants acquired approximately 22%

(approximately one and a half words) more receptive knowledge after JBR compared to LEA, which contradicted the predicted findings. The finding that JBR was more instrumental in receptive vocabulary acquisition supported the results of the study conducted by Fung et al. (2005), which found increases in receptive vocabulary in children with hearing impairments after JBR exposure.

The JBR target words also had a lower percent accuracy prior to exposure to the book reading approaches. Results of this study suggested that the greater personal aspect of LEA was not more effective in receptive vocabulary acquisition than the general social interaction of JBR. Additionally, the slightly more sophisticated language of JBR may have provided more structure for receptive vocabulary acquisition and retention than the limited language of LEA. Since LEA relies heavily on the language of the children constructing the story, the children do not have the exposure to slightly more sophisticated and structured language that published children's books may offer. In addition, if the children constructing the LEA stories have limited language abilities, limited language will be displayed and modeled through the created story.

Unlike receptive vocabulary acquisition, labeling and attribute acquisition could not be attributed to the book reading approaches. While participants did acquire the target word labels, the participants also gained labels for the control words. In addition, the participants demonstrated more label knowledge of the control words. This suggested that the acquisition of labels could not be attributed to the book reading approaches, but that extraneous variables influenced the acquisition of labels for participants. As with the labeling acquisition, attribute acquisition could not be definitively attributed to the book reading approaches. Gains were seen in attributes for the target words; however, gains

were also observed for the control words. This occurrence suggested that extraneous variables in the participants' environment influenced the acquisition of attributes.

The participants in this study were enrolled in an auditory-oral school, which emphasized listening and speaking. Greater emphasis was placed upon verbal communication; participants were consistently labeling items and hearing the labels of items in their environment. The environment may have contributed to the participants' increased ability to label the control words as the study progressed.

Though no published studies specifically address the acquisition of expressive vocabulary from interactive book readings for children with hearing impairments, studies have reported acquisition of expressive vocabulary after exposure to JBR in children with delayed language. Hargrave and Senechal (2000) reported increases in expressive vocabulary in children with language delays after exposure to JBR. The participants of Hargrave and Senechal's (2000) study and the current participants differed in hearing status; however, they had similar language abilities. The finding of the current study that labeling acquisition could not be attributed to the book reading approaches contradicts the study by Hargrave and Senechal (2000). The participants in the study conducted by Hargrave and Senechal (2000) were enrolled in a daycare center specifically designed for lower income families. The daycare did not specifically emphasize receptive or expressive language development, as the school in this study did. The difference in findings may be due to the difference in the structure, emphasis, and philosophy of the environments of each study. Additionally, the findings of this study contradicted the findings of Whitehurst et al. (1988) and Arnold et al. (1994), which found increases in labeling ability after exposure to JBR.

The participants acquired more attributes following JBR than LEA or the control words; however, similar small gains were made in LEA and control words. The similarities made it difficult to contribute gains in attributes to the book reading approaches. Fewer gains may have been made in the LEA target words due to the procedure for LEA. Since LEA relies on the child to produce the story, fewer opportunities to hear or incorporate attributes will exist if the child has delayed language. Additionally, lack of sophisticated language and structure in LEA may not have provided the necessary models for acquisition and retention of attributes. JBR provides the exposure to slightly more sophisticated language that may model attributes.

Vocabulary Acquisition by Normal Hearing versus Hearing Impaired

The second research question addressed differences in receptive and expressive vocabulary acquisition among children with normal hearing and with hearing impairments. Some variability in vocabulary knowledge prior to exposure to the book reading approaches was observed. As would be expected the normal hearing group demonstrated more receptive, labeling, and attribute knowledge than the hearing impaired group. The differences in knowledge seen at the pretest can be explained by the fact that children with hearing impairments, regardless of amplification, do not have the same auditory access as children with normal hearing (Goldin-Meadow & Mayberry, 2001).

Both groups acquired receptive vocabulary after each of the book reading approaches; however, the hearing impaired group gained more target words receptively after exposure to each of the book reading approaches than the normal hearing group. While the hearing impaired group did acquire more receptive vocabulary, this group had a considerably lower mean percent accuracy on the receptive pretest than the normal

hearing group. The hearing impaired group had a larger potential to acquire receptive vocabulary than the normal hearing group. The normal hearing group had larger receptive knowledge at the end of the study than the hearing impaired group. This suggested that the hearing impaired group gained knowledge but not enough receptive knowledge to be equal with that of the normal hearing group. The normal hearing group acquired equal receptive vocabulary immediately following each approach; however, this group of normal hearing participants maintained slightly more of the acquired receptive vocabulary four weeks after exposure to LEA. This finding suggested that LEA may have been more instrumental in the retention of newly acquired vocabulary for normal hearing participants, possibly due to the greater personal focus of LEA may have been beneficial in receptive vocabulary retention for the normal hearing participants.

Analysis of the labeling acquired revealed that the hearing impaired group learned more than the normal hearing group regardless of the approach used. The hearing impaired group acquired almost twice as much labeling knowledge than the normal hearing group immediately following exposure to JBR and after exposure to LEA. Again, the hearing impaired group had a greater potential to acquire new labels based upon their pretest knowledge; however, their labeling knowledge was less than the labeling knowledge demonstrated by the normal hearing group at each posttest. This suggested that the hearing impaired group gained labeling knowledge, but not enough labeling knowledge to be equivalent to that of the normal hearing group. Additionally, the normal hearing group demonstrated higher gains in control word knowledge at the maintenance posttest, which suggested that extraneous variables impacted the acquisition of labels. The environment and philosophy of the school emphasizes and promotes oral

communication, therefore, items are constantly and consistently labeled. This aspect of the environment may have influenced the normal hearing group's acquisition and retention of target word and control word labels.

Finally, similarities in the acquisition of attributes were found. The normal hearing group acquired equal attributes immediately after each book reading approach. The normal hearing group had a higher mean percentage gain than the hearing impaired group after LEA exposure; however, the hearing impaired group had a higher percentage than the normal hearing group following JBR. It was thought that the normal hearing group may have acquired more attributes from JBR because of the slightly more sophisticated structure and language of the books used. In LEA, the language and structure read was that of their classmates with hearing impairments, which was not as sophisticated or complex. Additionally, the normal hearing demonstrated higher mean percentage accuracies for attributes at the maintenance posttest, suggesting that extraneous variables influenced the retention of attributes.

Previous Research

Numerous studies have investigated the efficacy of JBR for vocabulary acquisition in children with typical development and children with language delays. Fewer studies have addressed the impact of JBR on vocabulary acquisition in children with hearing impairments. These studies investigated JBR in isolation and did not compare this book reading approach to another approach, such as LEA. Though no comparative studies were available, similarities between this study and previous studies were found in results regarding vocabulary acquisition following JBR in children with hearing impairments and normal hearing. The results of the vocabulary acquired by the

normal hearing group supported the findings of Senechal et al. (1995), Ard and Beverly (2004), and Justice (2002), which reported receptive vocabulary gains following exposure to JBR. Increases in receptive vocabulary were similar to Ard and Beverly (2004) and Justice (2002), which employed the same number of book readings. The increases in expressive vocabulary in the normal hearing group following exposure to JBR exhibited in this study support the findings of Whitehurst et al. (1988) and Arnold et al. (1994), who found that two to three year old children acquired more expressive vocabulary when exposed to JBR. While most studies investigated the expressive vocabulary acquisition in terms of labeling, few addressed deeper expressive vocabulary acquisition similar to the expressive vocabulary acquisition of attributes completed by this study. This study found increases in acquisition of attributes in the normal hearing group after JBR similar to Justice et al. (2005). Justice et al. (2005) reported that participants demonstrated more expressive vocabulary acquisition through a definition task after exposure to elaboration during book reading, which was similar to the commenting used in this study during JBR.

The majority of the participants in this study were children with hearing impairments, so it is important to compare the results of this study with previous studies addressing the efficacy of JBR in children with hearing impairments. Fung et al. (2005) investigated the use of questioning and commenting on receptive vocabulary acquisition in children with hearing impairments. The results of this study regarding receptive vocabulary acquisition in the participants with hearing impairments supported the findings of Fung et al. (2005), which indicated that questioning and commenting during book reading were effective methods of improving receptive language.

There are no published studies that systematically address the acquisition of vocabulary following exposure to LEA; however, Pakulski and Kaderavek (2004) published a case study documenting the use of LEA with two children with hearing impairments and the possible expansion of vocabulary due to LEA exposure. The results of this study revealed that children with hearing impairments did acquire receptive and expressive vocabulary following exposure to LEA. The results of this study supported the anecdotal reports of Pakulski and Kaderavek (2004).

Clinical Impressions

The findings of this study suggest that preschool and kindergarten children with hearing impairments and normal hearing can acquire vocabulary from interactive book readings. Acquisition of novel vocabulary occurred after only three readings using the specific reading approach. Since the study utilized only three book readings per book, more significant learning may have occurred if a greater number of readings were completed. In this study, JBR and LEA were conducted within the classroom; however, the use of either book reading approach could be easily performed on an individual basis by parents, clinicians, or other adults to enlarge a child's vocabulary.

While both JBR and LEA contributed to the acquisition of receptive vocabulary in the participants with hearing impairments, the participants acquired and maintained more receptive vocabulary after exposure to JBR. This finding suggests that the use of already published children's books paired with joint book reading strategies of commenting and questioning can increase a child's receptive vocabulary. Using JBR as a method of increasing vocabulary requires less preparation time or materials than LEA. Additionally, in this study an experience preceded the JBR in order to account for the

experience portion of LEA. This experience would not be present in traditional JBR. It is possible that differences in word learning would have occurred if the JBR target words had not been presented in an experience prior to JBR and were only presented in the JBR books. In order to effectively conduct LEA, the adult must provide the child with an event or experience, take pictures, and help the child write a narrative about the event or experience, all of which can be time-consuming. Though LEA is more time-consuming to conduct, the classroom teachers reported that the participants of this study enjoyed seeing themselves in the pictures when reading the story.

Additionally, the use of JBR requires less language from the student. The books used for JBR pictured children close to the participants' age, had brightly colored pictures and provided a sequential report of the activity. When exposed to JBR, the only expressive output required by the participants was answering four questions relating to the book. By contrast, in LEA the participants were expected to provide at least three utterances in order to create a narrative about a completed activity. The created narrative's language was limited by the participants' language abilities. Decreased language abilities will impact the narrative language, thus potentially making it more difficult to acquire novel vocabulary from LEA stories. Additionally, LEA did not provide opportunities for exposure to more advanced sophisticated narrative or expository language that often can be found when using JBR.

Limitations and Future Research

While this study provides insight into the acquisition of vocabulary by children with hearing impairments, certain limitations of the study and areas of future research warrant discussion. This study utilized a small number of children with hearing

impairments and an even smaller number of children with normal hearing. Due to low participant numbers, generalizations to the larger population of children with hearing impairments and normal hearing could not be completed. Additionally, a homogeneous group of children was used for this study, therefore, generalization of the results to children with varying communication modalities, amplification types, cognitive levels, educational settings, and age cannot be made. Due to the numerous variables associated with a hearing loss, a larger participant population composed of children utilizing various communication modalities and amplification types should be employed in future studies.

The participants in this study also had high exposure to literacy prior to the study. A study exploring the effects of book reading approaches on vocabulary acquisition in children with varying literacy exposure would help generalize the results to a greater population. Additionally, future research should further investigate the impact of vocabulary acquisition from interactive book readings in children with normal hearing. Only two participants in this study had normal hearing, thus generalizations to children with normal hearing cannot be made.

The procedures and protocol of this study regimented the specific book reading behaviors of the teachers, thus reducing the naturalistic setting of book reading. However, without strict adherence to the procedures during the book reading, internal validity of the study would have been reduced making it more difficult to determine the true effect of the book readings on vocabulary acquisition. Future studies should investigate the variance in questioning and commenting during book readings and the effect on vocabulary acquisition.

This study did not investigate the motivation during, engagement in, or the attention to the book reading approach in the participants; however, the classroom teachers reported that the participants liked seeing pictures of themselves within the LEA stories they were reading. Future studies should investigate the impact of personal photographs, colored drawings, and general photographs on a child's engagement, motivation, and attention during the book reading. Additionally, further investigations into the influence of personal interest in a story on engagement, attention, and motivation should be addressed.

The area of vocabulary acquisition in children with normal hearing and hearing impairments would also benefit from further investigation into the effect of the genres of books on vocabulary acquisition. This study only focused on nonfiction picture books during the joint book reading phases. Comparisons of vocabulary acquisition during the language experience approach and joint book reading using fictional picture books would further allow the generalization of vocabulary acquisition to book readings. Additionally, this study implemented the language experience approach as a class, so that each participant contributed to the creation of one story related to the experience. Future investigations should address the effect of class created stories versus individually-created stories on vocabulary acquisition.

Finally, this study required the participant to spontaneously answer a vague question of "What is this?" and "What can you tell me about it?" in order to assess expressive vocabulary acquisition. The area of expressive vocabulary acquisition would benefit from replication of this study utilizing varying methods to assess expressive

language. Future research could investigate the use of direct questions ("What color is this?") or yes/no questions to measure the expressive vocabulary acquisition.

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Appendix A

Eastern Illinois University Internal Review Board Approval

Joint Book Reading vs. LEA 67

From : EIU IRB <eiuirb@www.eiu.edu> Tue, May 22, 2007 04:15 PM

Subject : IRB Protocol Approval - Sturm, 07-063

To : wmsturm@eiu.edu

Cc : Angela R. Beckman <arbeckman@eiu.edu>, Cheryl A. Siddens <casiddens@eiu.edu>

Reply Reply All Forward

May 22, 2007

Whitney Sturm

Communication Disorders and Sciences

Thank you for submitting the research protocol titled "The Effect of Joint Book Reading and the Language Experience Approach on Vocabulary Acquisition" for review by the Eastern Illinois University Institutional Review Board (IRB). The IRB has Approved this research protocol following an Expedited Review procedure. IRB review has determined that the protocol involves no more than minimal risk to subjects and satisfies all of the criteria for approval of research.

This protocol has been given the IRB number 07-063. You may proceed with this study from 5/21/2007 to 5/20/2008. You must submit Form E, Continuation Request, to the IRB by 4/9/2008 if you wish to continue the project beyond the approval expiration date.

This approval is valid only for the research activities, timeline, and subjects described in the above named protocol. IRB policy requires that any changes to this protocol be reported to, and approved by, the IRB before being implemented. You are also required to inform the IRB immediately of any problems encountered that could adversely affect the health or welfare of the subjects in this study. Please contact me, or the Compliance Coordinator at 581-8576, in the event of an emergency. All correspondence should be sent to:

Institutional Review Board

c/o Office of Research and Sponsored Programs

Appendix B

Carle Hospital Internal Review Board Approval

Carle
Carle Foundation Hospital
611 West Park Street, Urbana, IL 61801-2595 Phone: (217) 383-3311

DATE: July 18, 2007

TO: Danielle Edmondson, MA, CCC-A
St. Joseph's Institute for the Deaf

FROM: David M. Main, MD
Chair, Carle Institutional Review Board

SUBJECT: **07-41 The Effect of Joint Book Reading and the Language Experience Approach on Vocabulary Acquisition**

Thank you for submitting the above study with requested changes to the Institutional Review Board. The study was reviewed and approved at the Institutional Review Board committee's last meeting on February July 18, 2007. The protocol has been approved at **minimal risk**. This research was approved as compliant for children under **45CFR46.404:** Research not involving greater than minimal risk. Since the participants are 3 – 6 years old with language delays and cannot read or write, the participants' parents will give consent for participation in the study. An assent form is not necessary for this study.

Appendices A-G (Dear Parents recruitment letter, Informed Consent, Questions Regarding Participation, Participant Information, Literacy Questionnaire, Book list, and Theme/Target Word/Foils list) and HIPAA Authorization were also approved. The email regarding Eastern Illinois University IRB approval for this study was noted. Research on this project may begin at any time.

- Both a consent form and an *Authorization to Use and Disclose Protected Health Information for Research Purposes* that have been approved by the Carle Institutional Review Board and should be used with patients are enclosed.
- Research subjects need to sign **both** the approved consent form and the HIPAA Authorization.
- The original signed copy of the Authorization should be kept with your study records. A copy should go in the patient's chart, and another copy should be given to the patient for their records.
- The original signed copy of the consent form should be kept with your study records. A copy should go in the patient's chart, and another copy should be given to the patient for their records.
- If changes in procedure become advisable, these changes must be submitted to the Office of the Institutional Review Board and approved by the Institutional Review Board prior to initiating the changes.
- If any problems involving human subjects occur, the Carle Institutional Review Board needs to be notified within 24 hours. The phone number is 217/383-4366.
- If a research participant becomes incarcerated during the course of the study, the Carle Institutional Review Board needs to be contacted and approval must be obtained before research can continue with that participant.
- Materials submitted to the Carle Institutional Review Board should not contain participant names, clinic numbers, or other identifying factors.
- You will be asked to make periodic reports on this research to the Carle Institutional Review Board.

Thank you for your interest in research at Carle. Carle IRB approval for this study expires July 18, 2008.

sw/bz
cc: Whitney Sturm/1618 6th St. Apt. 33/Charleston, IL 61920
Charletta Little, BS/Modular East

Appendix C

Letter of Support from St. Joseph's Institute for the Deaf

Carle

May 9, 2007

To Whom It May Concern:

As the director of St. Joseph's Institute for the Deaf, I have met with Whitney Sturm to discuss participating in her research project. This research project involves activities that currently take place within our classrooms. The classroom teachers have agreed to change the timing of these activities in order for Whitney to document any vocabulary growth from the activities.

The classroom teachers and I understand that our students' vocabulary knowledge will be measured at the beginning of the study, twice during the study, and once at the end of the study. The classroom teachers have committed to reading the books three times per week at the scheduled time as well as complete the specified classroom activities.

We are excited about participating in this research project. We look forward to seeing the results of the project as well as the benefits for our students.

Sincerely,

Danielle M. Edmondson

Danielle Edmondson, M.A., CCC-A
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Email Danielle.Edmondson@carle.com

Appendix D

Parental Recruitment Letter

May 25, 2007

Dear Parents:

Your child is being invited to participate in a research project during the fall of 2007. The research project is part of a master's thesis being completed in the Communication Disorders and Sciences Department at Eastern Illinois University.

The purpose of the research project is to evaluate the effectiveness of joint book reading and the language experience approach on increasing receptive and expressive language. Joint book reading is the interaction between an adult, a child, and a book while reading. The adult actively encourages verbal participation and learning of new concepts with repetition and familiar book routines. The language experience approach involves the student dictating ideas about an experience to a teacher, the teacher writing the ideas in story form, and finally the reader using the story as reading material.

Currently each week your child's teacher reads book to the class and leads classroom activities relating to themes. Your child's teacher has agreed to participate in this study and systematically alter the time she conducts the book readings and classroom activities. We are asking for your permission to test the amount of vocabulary your child has learned with each type of book reading. To assess receptive language, your child will be asked to point to a colored-line drawing that illustrates the target word. Expressive language will be assessed by having your child verbally label a colored-line drawing and tell as much about the items as he/she knows.

Additionally, we are asking your permission to talk to your child's teacher. We will be asking your child's teacher for information relating to hearing abilities, language abilities, amplification, age, and gender. This information will only be used to provide a description of the individuals participating in the study.

Prior to beginning of the study, you will be asked to complete a questionnaire regarding literacy exposure. Your responses will not impact your child's participation in the study. Your responses will be used for description purposes. You are free to decline to answer any specific items or questions in interviews or questionnaires.

Participation in this research project is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or St. Joseph's Institute for the Deaf. You are free to decline to continue participating in this research project.

Attached you will find a voluntary consent form for participation. In order for your child to participate in this study, a signed voluntary consent form is needed. If you consent to your child's participation in this study, please sign the attached form and return it to your child's classroom teacher.

Sincerely,

Whitney Sturm, B.S.
Primary Investigator

Appendix E

Informed Consent

Voluntary Informed Consent Form

Title of Investigation: The Effect of Joint Book Reading and the Language Experience Approach on Vocabulary Acquisition

Name of Principal Investigator: Whitney Sturm

IRB File Number: 07-41

This document is to certify that I,_____, hereby freely give permission to have my child participate as a volunteer in a study as an authorized part of the educational and research program of the Eastern Illinois University under the supervision of Dr. Rebecca Throneburg and Ms. Angela Beckman.

The research project and my child's role in the research project have been fully explained to me, and I understand their explanation as well as what will be expected of me by virtue of my participation in this research project. A copy of the procedures of this investigation and a description of any risks, discomforts, and benefits associated with my child's participation has been provided and discussed in detail with me.

I have been given an opportunity to ask questions, and all such questions and inquiries have been answered to my satisfaction.

I understand that I am free to decline to answer any specific items or questions in interviews or questionnaires.

I understand that all data will remain confidential with regard to my child's identity.

I understand the benefits and risks of participating in this research.

I certify that to the best of my knowledge and belief, my child has no physical or mental illness or weakness that would increase the risk to her participation in this study.

I understand this participation in this research project is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project.

I understand that the approximate length of time required for participation in this research project is one and one half hour a week for four weeks.

I understand that as a condition of my child's participation, my child will participate in a classroom activity centered around a book theme and be read a picture storybook or a class created book three times a week.

I understand that as a condition of my child's participation, my child will participate in receptive and expressive language measures, which will take ten minutes.

I understand that as a condition of my child's participation, I will be asked to complete a literacy questionnaire. I understand that my responses on the literacy questionnaire will be used for demographic purposes only and will not impact my child's participation in the study.

I understand further that if I decline to continue participating in this research project, I will not forgo any benefits to participating as described above. I understand that if I have any questions or concerns about the treatment of human subjects in this study, I may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Avenue
Charleston, IL 61920
Telephone: (217) 581-8576

Although this person will ask my name, I understand that all inquires will be kept in the strictest confidence.

Furthermore, I understand that if I have any questions concerning the purposes or the procedures associated with this research project, I may call or write:

Whitney Sturm, B.S.
Communication Disorders and Sciences Department
Eastern Illinois University
600 Lincoln Ave
Charleston, IL 61920
217-581-8487
wmsturm@eiu.edu

I also understand that it will not be necessary to reveal my name in order to obtain additional information about this research project from the primary investigator.

I FURTHER UNDERSTAND THAT I AM FREE TO WITHDRAW MY CONSENT AND DISCONTINUE MY CHILD'S PARTICIPATION AT ANY TIME.

_____ _____
Date Signature of Subject

I hereby consent to the participation of _____, a minor subject in the investigation herein described.

_____ _____
Date Signature of Subject

I, the undersigned, have defined and fully explained the investigation to the above subject.

_____ _____
Date Signature of Subject

I was present when the investigation was explained to the subject in detail, and to the best of my knowledge and belief said explanation was understood.

_____ _____
Date Signature of Witness

Appendix F

Literacy Questionnaire

Literacy Questionnaire

Look around your home and think about the activities you do with your child. If the statement is true, place a checkmark in the "true" column. If the statement is false, place a checkmark in the "false" column.
Child's initials: _____ Teacher:_____

Statements	True	False
My child has at least one alphabet book (e.g. Richard Scarry's *ABC Book*).		
My child has magnetized alphabet letters to play with.		
My child has crayons and pencils readily available for writing and drawing.		
My child had paper readily available for writing and drawing.		
My child has a table or surface readily available for writing and drawing.		
My child has at least one rhyme book (e.g. Dr. Seuss' *Cat in the Hat*).		
My child has more than one rhyme book.		
My child has at least 10 picture books.		
My child has at least 20 picture books.		
My child has at least 50 picture books.		
My child plays beginning reading and alphabet games on a computer (e.g. Reader Rabbit)		
My child has worksheets or games to help learn the alphabet.		
I (or another adult in the house) read a picture book with my child at least once a week.		
I (or another adult in the house) read a picture book with my child at least four times a week.		
I (or another adult in the house) teach new words to my child at least once a week.		
I (or another adult in the house) teach new words to my child nearly everyday.		
I (or another adult in the house) have a conversation with my child at least once a week about something informative (e.g. "How do you think they make ice cream?").		
I (or another adult in the house) have a conversation with my child nearly everyday about something informative.		
I (or another adult in the house) encourage my child to tell about experiences (e.g. "What happened at the birthday party?").		
I (or another adult in the house) help my child memorize nursery rhymes.		
I (or another adult in the house) encourage my child to tell me what he or she wants using complete sentences.		
I (or another adult in the house) take my child to the library or a bookstore at least once every two months.		
My child sees me or another adult in the house reading books, magazines, or newspapers at least once a week.		

Statements	True	False
My child sees me or another adult in the house reading books, magazines, or newspapers nearly everyday.		
I am a good reader.		
I have a large vocabulary.		
I expect that my child will get excellent grades in school.		
I enjoy reading picture books with my child.		
I began to read picture books with my child before he/she was a year old.		
I (or another adult in the house) encourage my child to watch beginning reading shows on TV or tape (e.g. Between the Lions on PBS).		
I (or another adult in the house) encourage my child to play with computer games that introduce beginning reading and the alphabet.		

The following statements are about help you give your child. Answer "true" if you help your child now, or if you have helped your child on one of the tasks in the past, but don't need to any more because your child has learned the task.

I (or another adult in the house) help my child learn to sing the ABC song.		
I (or another adult in the house) help my child learn to name alphabet letters.		
I (or another adult in the house) help my child learn to write alphabet letters.		
I (or another adult in the house) help my child learn to write his/her name.		
I (or another adult in the house) help my child learn to write other people's names.		
I (or another adult in the house) help my child learn to rhyme.		
I (or another adult in the house) help my child learn the sounds that alphabet letters make (e.g. "b" makes the /b/ sound).		

Is there any additional information you wish to share regarding your at home literacy activities with your child?

_____

_____

_____

_____

Appendix G

Specific Activities, Book Titles, and Target Words

Book Titles, Activity, and Target Words

Book Title	Activity	Target Words
Watch Me Make a Bird Feeder	Bird Feeder	Branch Pinecone String Seeds
Let's Make a Pizza	Pizza	Sauce Pepperoni Slices Pizza
I Can Play Baseball	Baseball	Glove Baseball Pitcher Bat
Let's Make a Cake	Cake	Vanilla Teaspoon Icing Batter
Watch Me Plant a Garden	Garden	Garden Soil Green Beans Window
Watch Me Make a Mask	Mask	Mask Lips Eyebrows String
I Can Play Soccer	Soccer	Soccer Feet Grass Goal
Let's Make Tacos	Tacos	Spices Tacos Cheese Tomatoes
Let's Make Bread	Bread	Dough Yeast Oven Pan
Let's Make Cookies	Cookies	Spoon Bowl Chocolate Eggs

Appendix H

Possible Books used in the Study

Possible Books Used During the Study

Book Title	Author	Number of Pages	Early Intervention Level
Let's Make a Cake	Mary Hill	21	7
Let's Make Bread	Mary Hill	21	8
Let's Make Cookies	Mary Hill	21	7
Let's Make Pizza	Mary Hill	21	8
Let's Make Tacos	Mary Hill	21	8
I Can Play Baseball	Edana Eckart	21	7
I Can Play Socccer	Edana Eckart	21	8
Watch Me Make a Bird Feeder	Jack Otten	21	7
Watch Me Make a Mask	Jack Otten	21	8
Watch Me Plant a Garden	Jack Otten	21	8

Appendix I

Target Words and Foils used in the Receptive Assessment

Target Words and Foils Used in the Receptive Assessment

Theme/Activity	Target Word	Foils
Bird feeder	Branch	Leaf
		Trunk
		Root
	Pinecone	Acorn
		Pebble
		Walnut
	String	Jump rope
		Floss
		Cable
	Seeds	Peanut
		Popcorn
		Grape
Pizza	Sauce	Soup
		Honey
		Pudding
	Pepperoni	Mushrooms
		Onions
		Sausage
	Pepper	Cauliflower
		Cucumber
		Corn
	Pizza	Pie
		Cookie
		Hamburger
Baseball	Glove	Base
		Helmet
		Dugout
	Baseball	Football
		Basketball
		Tennis ball
	Pitcher	Catcher
		Umpire
		Announcer
	Bat	Racket
		Paddle
		Stick

Cake	Vanilla	Food coloring
		Oil
		Water
	Teaspoon	Spatula
		Whisk
		Tongs
	Icing	Candles
		Sprinkles
		Cake figurine
	Batter	Dip
		Whipped cream
		Cottage cheese
Garden	Garden	Park
		Playground
		Yard
	Soil	Worm
		Weeds
		Plant
	Green beans	Broccoli
		Asparagus
		Potatoes
	Window	Door
		Roof
		Floor
Mask	Mask	Costume
		Veil
		Wig
	Lips	Elbows
		Ears
		Nose
	Eyebrows	Hair
		Mouth
		Chin
	Marker	Crayon
		Pencil
		Chalk

Soccer	Soccer	Football
		Tennis
		Basketball
	Feet	Hands
		Legs
		Arms
	Grass	Bush
		Flower
		Moss
	Goal	Flag
		Uniform
		Field
		Ball
Tacos	Spices	Parmesan cheese
		Cornstarch
		Salt
	Tacos	Burrito
		Pita
		Omelet
	Cheese	Lettuce
		Tomato
		Sour cream
	Tomatoes	Carrot
		Celery
		Zucchini
Bread	Dough	Slime
		paste
		Mashed potatoes
	Yeast	Baking soda
		Sugar
		Flour
	Oven	Refrigerator
		Sink
		Microwave
	Pan	Cookie sheet
		Skillet
		Kettle
		Pot

Cookies	Spoon	Knife
		Fork
		Ice cream scoop
	Bowl	Plate
		Cup
		Napkin
	Mixer	Can opener
		Blender
		Crockpot
	Eggs	Apple
		Kiwi
		Pear

Appendix J

Individual Percent Accuracies on the Receptive Assessment

Individual Percent Accuracies on the Receptive Assessment

Participant	Pretest			Immediate Posttest			Maintenance Posttest		
	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Target Words
Preschooler 1	37.5%	50%	50%	43.75%	62.5%	87.5%	56.25%	100%	75%
Preschooler 2	25%	50%	12.5%	50%	75%	62.5%	50%	75%	62.5%
Preschooler 3	0%	50%	12.5%	25%	37.5%	37.5%	25%	12.5%	25%
Kindergartener 1	50%	62.5%	25%	25%	50%	50%	62.5%	87.5%	50%
Kindergartener 2	37.5%	62.5%	50%	56.25%	87.5%	75%	68.75%	75%	75%
Kindergartener 3	100%	12.5%	25%	50%	75%	100%	68.75%	75%	100%
Preschooler 4*	75%	62.5%	100%	50%	100%	100%	56.25%	100%	87.5%
Kindergartener 4*	75%	12.5%	50%	50%	87.5%	100%	62.5%	87.5%	100%

* Participant with normal hearing

Appendix K

Individual Percent Accuracies on the Labeling Assessment

Individual Percent Accuracies on the Labeling Assessment

Participant	Pretest			Immediate Posttest			Maintenance Posttest		
	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Targe Word
Preschooler 1	50%	12.5%	37.5%	43.75%	25%	37.5%	75%	37.5%	50%
Preschooler 2	0%	12.5%	25%	18.75%	50%	87.5%	25%	37.5%	50%
Preschooler 3	0%	12.5%	12.5%	12.5%	12.5%	50%	18.75%	25%	62.5%
Kindergartener 1	37.5%	37.5%	25%	56.25%	75%	62.5%	62.5%	62.5%	50%
Kindergartener 2	37.5%	62.5%	50%	81.25%	87.5%	87.5%	87.5%	87.5%	100%
Kindergartener 3	0%	37.5%	0%	43.75%	75%	62.5%	50%	37.5%	50%
Preschooler 4*	62.5%	50%	75%	87.5%	62.5%	100%	93.75%	87.5%	100%
Kindergartener 4*	62.5%	87.5%	75%	68.75%	87.5%	75%	93.75%	87.5%	87.5%

* Participant with normal hearing

Appendix L

Individual Percent Accuracies on the Attribute Assessment

Individual Percent Accuracies on the Attributes Assessment

Participant	Pretest			Immediate Posttest			Maintenance Posttest		
	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Target Words	Control Words	LEA Target words	JBR Target Words
Preschooler 1	0%	0%	0%	0%	0%	0%	0%	0%	0%
Preschooler 2	0%	0%	0%	0%	0%	2.08%	0%	0%	0%
Preschooler 3	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kindergartener 1	4.16%	4.16%	0%	2.08%	2.08%	4.17%	2.08%	0%	0%
Kindergartener 2	8.33%	6.25%	4.16%	11.46%	10.42%	4.17%	11.46%	10.42%	8.33%
Kindergartener 3	0%	0%	0%	2.08%	0%	6.25%	2.08%	4.17%	6.25%
Preschooler 4*	0%	0%	0%	2.08%	0%	10.42%	2.08%	10.42%	10.42%
Kindergartener 4*	6.25%	8.33%	8.33%	7.29	10.42%	0%	7.29%	14.58%	12.5%

* Participant with normal hearing